CLAIMS

1. A reticle carrier comprising:

a first plurality of electret fibers;

a second plurality of electret fibers;

a reticle holder between the first plurality of electret fibers and the second plurality of electret fibers.

2. The reticle carrier of claim 1, wherein the reticle holder is adapted to hold an Extreme Ultraviolet (EUV) reticle.

3. The reticle carrier of claim 1, wherein the electret fibers are imbedded with dipole moments to capture particles.

4. The reticle carrier of claim 3, wherein each of a plurality of said electret fibers has a dipole field with a polarity of about 10 nC/cm^2.

5. The reticle carrier of claim 1, wherein the first plurality of electret fibers comprise a grid including a first layer of electret fibers and a second layer of electret fibers.

6. The reticle carrier of claim 5, wherein the electret fibers in the first layer and the second layer are staggered.

7. The reticle carrier of claim 1, wherein a plurality of said electret fibers have a thickness of about 100μm.

8. The reticle carrier of claim 1, wherein a plurality of said electret fibers are aligned such that their dipole fields are aligned in their minimum energy configuration.

9. A reticle carrier comprising:

a plurality of walls, each wall having an interior side and an exterior side;

a cavity between the walls adapted to hold a reticle;

an in-line sensor on an interior side of one of said plurality of walls to monitor particles in the reticle carrier; and

an interface to transmit signals from the in-line sensor out of the reticle carrier.

10. The reticle carrier of claim 9, wherein the in-line sensor comprises a Quartz crystal microbalance (QCM) sensor.

11. The reticle carrier of claim 9, wherein the in-line sensor comprises a surface acoustic wave (SAW) sensor.

12. The reticle carrier of claim 9, wherein the in-line sensor is coated in such a way as to have a high sticking coefficient with the particles to be monitored.

13. The reticle carrier of claim 9, wherein the cavity comprises a reticle holder to hold a reticle having a patterned side.

14. The reticle carrier of claim 13, wherein the reticle comprises an Extreme Ultraviolet (EUV) reticle.

15. The reticle carrier of claim 13, wherein the reticle holder is adapted to hold the patterned side of the reticle facing the interior side of a first one of the plurality of walls; and

wherein the in-line sensor is positioned on the interior side said first one of the plurality of walls.

16. The reticle carrier of claim 9, further comprising a funnel extending from the cavity to the in-line sensor.

17. A debris trap comprising:

a frame; and

a plurality of electret fibers attached to the frame.

18. The debris trap of claim 17, wherein said frame is adapted to be positioned between an illumination source and a reticle in a lithography tool.

19. The debris trap of claim 18, wherein the lithography tool comprises an Extreme Ultraviolet lithography tool.

20. The debris trap of claim 17, wherein the debris trap comprises a pellicle.

21. The debris trap of claim 20, wherein the pellicle is adapted to be attached to a reticle.

22. The debris trap of claim 17, wherein the plurality of electret fibers are incorporated in a grid including a first layer of electret fibers and a second layer of electret fibers.

23. The debris trap of claim 22, wherein the electret fibers in the first layer and the second layer are staggered.

24. The debris trap of claim 17, wherein each of a plurality of said electret fibers has a thickness of about 50μm.

25. The debris trap of claim 17, wherein each of a plurality of said electret fibers has a dipole field with a polarity of about 10 nC/cm^2.

26. The debris trap of claim 17, wherein adjacent electret fibers in said plurality of electret fibers are spaced apart by about 1mm.

27. The debris trap of claim 17, wherein a plurality of said electret fibers are aligned such that their dipole fields are aligned in their minimum energy configuration.